

PACKAGE DIMENSIONS

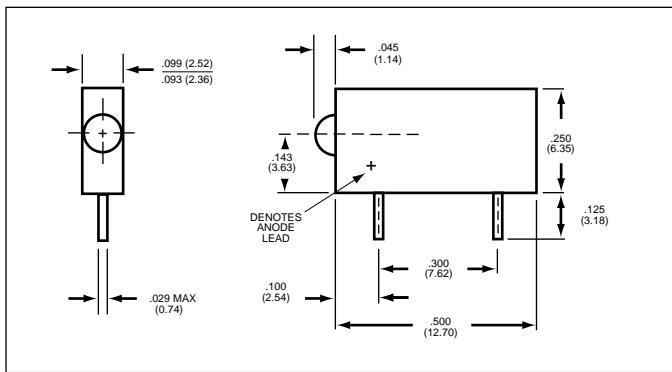


FIG. - 1

DESCRIPTION

For right-angle and vertical viewing, the QT Optoelectronics LED circuit board indicators come in T-3/4, T-1 and T-1 3/4 lamp sizes, and in single, dual and multiple packages. The indicators are available in AlGaAs red, high-efficiency red, bright red, green, yellow, and bi-color at standard drive currents, as well as at 2 mA drive current. To reduce component cost and save space, 5 V and 12 V types are available with integrated resistors. The LEDs are packaged in a black plastic housing for optical contrast, and the housing meets UL94V-0 flammability specifications.

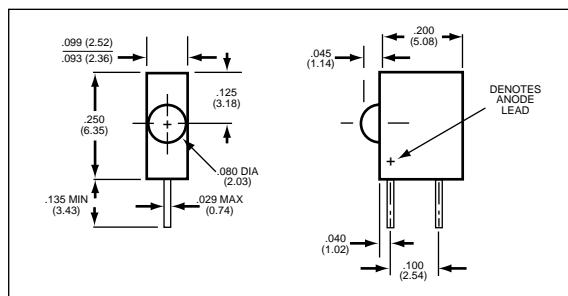


FIG. - 2

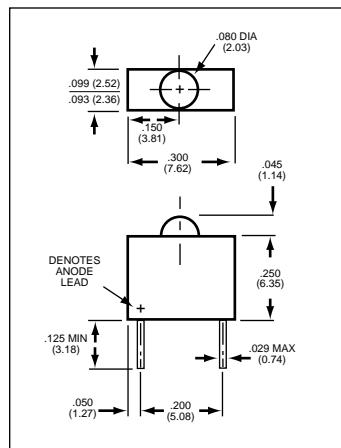


FIG. - 3

T-3/4 (Subminiature)

| PART NUMBER | COLOR | VF | mcd | @ mA | PKG. FIG. |
|-------------------|-------|-----|-----|------|-----------|
| MV5000.MP1 | RED | 1.7 | 3.0 | 20 | 1 |
| MV5300.MP1 | YLW | 2.1 | 2.0 | 20 | 1 |
| MV5400.MP1 | GRN | 2.3 | 3.5 | 20 | 1 |
| MV5000.MP2 | RED | 1.7 | 3.0 | 20 | 2 |
| MV5300.MP2 | YLW | 2.1 | 2.0 | 20 | 2 |
| MV5400.MP2 | GRN | 2.3 | 3.5 | 20 | 2 |
| MV5000.MP3 | RED | 1.7 | 3.0 | 20 | 3 |
| MV5300.MP3 | YLW | 2.1 | 2.0 | 20 | 3 |
| MV5400.MP3 | GRN | 2.3 | 3.5 | 20 | 3 |
| INTEGRAL RESISTOR | | | | | |
| MR5000.MP1 | RED | 5.0 | .6 | 3 | 1 |
| MR5010.MP1 | RED | 5.0 | 1.2 | 6 | 1 |
| MR5020.MP1 | RED | 5.0 | 2.0 | 16 | 1 |
| MR5310.MP1 | YLW | 5.0 | .6 | 5 | 1 |
| MR5410.MP1 | GRN | 5.0 | .5 | 5 | 1 |
| MR5000.MP2 | RED | 5.0 | .6 | 3 | 2 |
| MR5010.MP2 | RED | 5.0 | 1.2 | 6 | 2 |
| MR5020.MP2 | RED | 5.0 | 2.0 | 16 | 2 |
| MR5310.MP2 | YLW | 5.0 | .6 | 5 | 2 |
| MR5410.MP2 | GRN | 5.0 | .5 | 5 | 2 |
| MR5000.MP3 | RED | 5.0 | .6 | 3 | 3 |
| MR5010.MP3 | RED | 5.0 | 1.2 | 6 | 3 |
| MR5020.MP3 | RED | 5.0 | 2.0 | 16 | 3 |
| MR5310.MP3 | YLW | 5.0 | .6 | 5 | 3 |
| MR5410.MP3 | GRN | 5.0 | .5 | 5 | 3 |

GENERAL NOTES:

1. All dimensions are in inches (mm).
2. Tolerance is $\pm .015$ ($\pm .38$) unless otherwise specified.
3. All electrical values are typical.
4. All parts have colored *diffused* lens except those with an asterik (*), which denotes colored *clear* lens.

PACKAGE DIMENSIONS

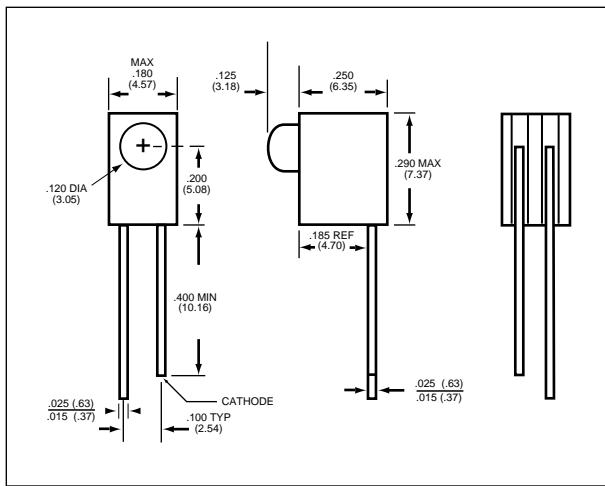


FIG. - 4A

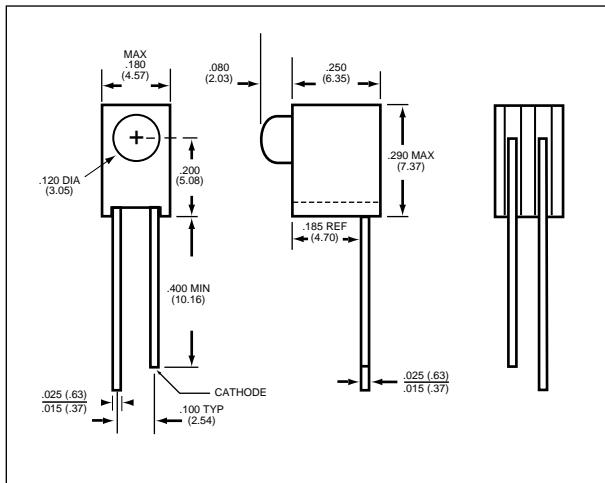


FIG. - 4B

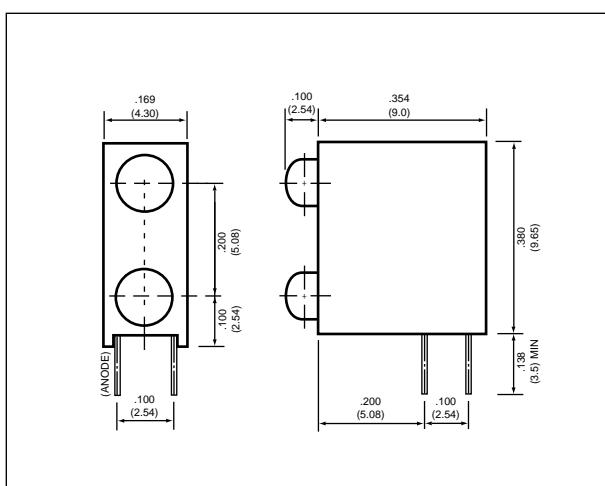


FIG. - 4C

T-1 (3mm)

| PART NUMBER | COLOR | VF | mcd | mA | @ | PKG. FIG. |
|-------------------|-------------|-----|------|----|---|-----------|
| MV5064.MP4A | RED | 1.6 | 1.5 | 20 | | 4A |
| MV5364.MP4A | YELLOW | 2.1 | 2.0 | 10 | | 4A |
| MV5464.MP4A | GREEN | 2.2 | 5.0 | 20 | | 4A |
| MV5764.MP4A | H-E RED | 2.0 | 2.0 | 10 | | 4A |
| MV5064.MP4B | RED | 1.6 | 1.5 | 20 | | 4B |
| MV5364.MP4B | YELLOW | 2.1 | 2.0 | 10 | | 4B |
| MV5464.MP4B | GREEN | 2.2 | 5.0 | 20 | | 4B |
| MV5764.MP4B | H-E RED | 2.0 | 2.0 | 10 | | 4B |
| LOW CURRENT (2mA) | | | | | | |
| HLMP-1700.MP4A | H-E RED | 1.8 | 2.0 | 2 | | 4A |
| HLMP-1719.MP4A | YELLOW | 1.9 | 2.0 | 2 | | 4A |
| HLMP-1790.MP4A | GREEN | 1.9 | 2.0 | 2 | | 4A |
| HLMP-1700.MP4B | H-E RED | 1.8 | 2.0 | 2 | | 4B |
| HLMP-1719.MP4B | YELLOW | 1.9 | 2.0 | 2 | | 4B |
| HLMP-1790.MP4B | GREEN | 1.9 | 2.0 | 2 | | 4B |
| AlGaAs RED | | | | | | |
| HLMP-K101.MP4A | AlGaAs RED | 1.8 | 45.0 | 20 | | 4A |
| HLMP-K105.MP4A | AlGaAs RED* | 1.8 | 65.0 | 20 | | 4A |
| HLMP-K150.MP4A | AlGaAs RED | 1.6 | 2.0 | 1 | | 4A |
| HLMP-K155.MP4A | AlGaAs RED* | 1.6 | 3.0 | 1 | | 4A |
| HLMP-K101.MP4B | AlGaAs RED | 1.8 | 45.0 | 20 | | 4B |
| HLMP-K105.MP4B | AlGaAs RED* | 1.8 | 65.0 | 20 | | 4B |
| HLMP-K150.MP4B | AlGaAs RED | 1.6 | 2.0 | 1 | | 4B |
| HLMP-K155.MP4B | AlGaAs RED* | 1.6 | 3.0 | 1 | | 4B |
| INTEGRAL RESISTOR | | | | | | |
| MR5060.MP4A | RED | 5.0 | 1.5 | 13 | | 4A |
| MR5360.MP4A | YELLOW | 5.0 | 4.0 | 10 | | 4A |
| MR5460.MP4A | GREEN | 5.0 | 4.0 | 12 | | 4A |
| MR5760.MP4A | H-E RED | 5.0 | 4.0 | 10 | | 4A |
| MR5060.MP4B | RED | 5.0 | 1.5 | 13 | | 4B |
| MR5360.MP4B | YELLOW | 5.0 | 4.0 | 10 | | 4B |
| MR5460.MP4B | GREEN | 5.0 | 4.0 | 12 | | 4B |
| MR5760.MP4B | H-E RED | 5.0 | 4.0 | 10 | | 4B |

T-1 (3mm) bilevel

| PART NUMBER | COLOR | VF | mcd | mA | @ | PKG. FIG. |
|-------------|-----------------|-----|-----|----|---|-----------|
| QLA694B-2H | B. RED/B. RED | 2.1 | 1.4 | 10 | | 4C |
| QLA694B-2I | H-E RED/H-E RED | 2.0 | 6.0 | 10 | | 4C |
| QLA694B-2G | GRN/GRN | 2.1 | 6.0 | 10 | | 4C |
| QLA694B-2Y | YEL/YEL | 2.0 | 6.0 | 10 | | 4C |
| QLA694B-HG | B. RED/GRN | 2.1 | 1.4 | 10 | | 4C |
| QLA694B-GY | GRN/YEL | 2.1 | 6.0 | 10 | | 4C |

First color indicated is on top, and the second color is on the bottom.
For example: QLA694B-GY has GRN(top)/YEL(bottom).

GENERAL NOTES:

1. All dimensions are in inches (mm).
2. Tolerance is $\pm .015$ ($\pm .38$) unless otherwise specified.
3. All electrical values are typical.
4. All parts have colored *diffused* lens except those with an asterisk (*), which denotes colored *clear* lens.
5. Custom color combinations are available.

PACKAGE DIMENSIONS

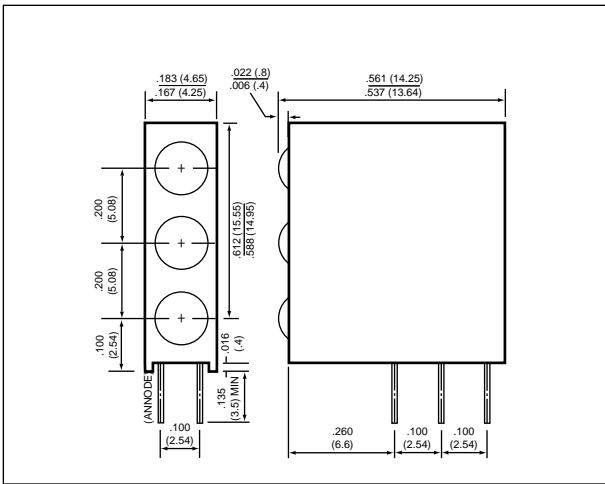


FIG. - 4D

T-1 (3mm) trilevel

| PART NUMBER | COLOR | VF | mcd | mA | @ | PKG. | FIG. |
|-------------|----------------|-----|-----|----|---|------|------|
| QLA764B-3H | B. RED | 2.1 | 1.4 | 10 | | 4D | |
| QLA764B-3I | H-E RED | 2.0 | 6.0 | 10 | | 4D | |
| QLA764B-3G | GRN | 2.1 | 6.0 | 10 | | 4D | |
| QLA764B-3Y | YEL | 2.0 | 6.0 | 10 | | 4D | |
| QLA764B-HGY | B. RED/GRN/YEL | 2.1 | 1.4 | 10 | | 4D | |
| QLA764B-YGH | YEL/GRN/B. RED | 2.1 | 1.4 | 10 | | 4D | |

First color indicated is on top, the second is in the middle, and the third is on the bottom.
For example: QLA764B-YGH has YEL(top)/GRN(middle)/B. RED(bottom).

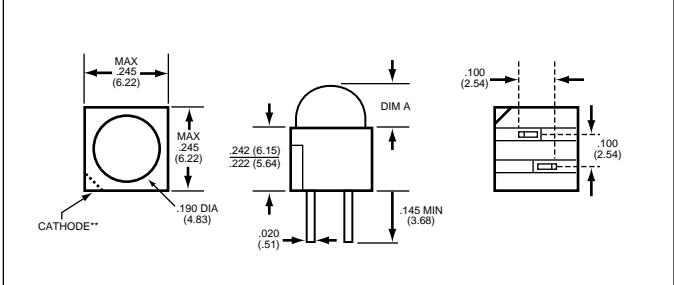


FIG. - 5

T-1 3/4 (5mm)

| PART NUMBER | COLOR | VF | mcd | mA | @ | DIM A | PKG. | FIG. |
|-------------------|------------|------|-------|----|------|--------|------|------|
| MV60538.MP5 | RED | 1.7 | 2.0 | 20 | .125 | (3.18) | 5 | |
| MV63538.MP5 | YLW | 2.1 | 18.0 | 20 | .125 | (3.18) | 5 | |
| MV64538.MP5 | GRN | 2.2 | 26.0 | 20 | .125 | (3.18) | 5 | |
| MV67538.MP5 | H-E RED | 2.1 | 14.0 | 20 | .125 | (3.18) | 5 | |
| MV60539.MP5 | RED | 1.7 | 3.2 | 20 | .180 | (4.57) | 5 | |
| MV63539.MP5 | YLW | 2.1 | 20.0 | 20 | .180 | (4.57) | 5 | |
| MV64539.MP5 | GRN | 2.2 | 28.0 | 20 | .180 | (4.57) | 5 | |
| MV67539.MP5 | H-E RED | 2.1 | 15.0 | 20 | .180 | (4.57) | 5 | |
| LOW CURRENT (2mA) | | | | | | | | |
| HLMP-47009.MP5 | H-E RED | 1.8 | 2.0 | 2 | .180 | (4.57) | 5 | |
| HLMP-47199.MP5 | YLW | 1.9 | 2.0 | 2 | .180 | (4.57) | 5 | |
| HLMP-47409.MP5 | GRN | 1.9 | 3.0 | 2 | .180 | (4.57) | 5 | |
| AlGaAs RED | | | | | | | | |
| HLMP-D1019.MP5 | AlGaAs RED | 1.8 | 70.0 | 20 | .180 | (4.57) | 5 | |
| HLMP-D1509.MP5 | AlGaAs RED | 1.6 | 3.0 | 1 | .180 | (4.57) | 5 | |
| ULTRA BRIGHT | | | | | | | | |
| MV33509.MP5 | YLW* | 2.2 | 150.0 | 20 | .180 | (4.57) | 5 | |
| MV34509.MP5 | GRN* | 2.2 | 150.0 | 20 | .180 | (4.57) | 5 | |
| MV37509.MP5 | H-E RED* | 2.2 | 150.0 | 20 | .180 | (4.57) | 5 | |
| INTEGRAL RESISTOR | | | | | | | | |
| MR30509.MP5 | RED | 5.0 | 2.0 | 13 | .180 | (4.57) | 5 | |
| MR30519.MP5 | RED | 12.0 | 2.0 | 13 | .180 | (4.57) | 5 | |
| MR33509.MP5 | YLW | 5.0 | 4.0 | 10 | .180 | (4.57) | 5 | |
| MR33519.MP5 | YLW | 12.0 | 4.0 | 13 | .180 | (4.57) | 5 | |
| MR34509.MP5 | GRN | 5.0 | 4.0 | 12 | .180 | (4.57) | 5 | |
| MR34519.MP5 | GRN | 12.0 | 4.0 | 13 | .180 | (4.57) | 5 | |
| MR37509.MP5 | H-E RED | 5.0 | 4.0 | 10 | .180 | (4.57) | 5 | |
| MR37519.MP5 | H-E RED | 12.0 | 4.0 | 13 | .180 | (4.57) | 5 | |
| BICOLOR** | | | | | | | | |
| MV54919.MP5 | RED/GRN | 2.3 | 6.0 | 20 | .180 | (4.57) | 5 | |

GENERAL NOTES:

1. All dimensions are in inches (mm).
2. Tolerance is $\pm .015$ ($\pm .38$) unless otherwise specified.
3. All electrical values are typical.
4. All parts have colored *diffused* lens except those with an asterik (*), which denotes colored *clear* lens.
5. A double asterik (**) denotes that the cathode, as indicated, is the red cathode for the RED/GRN bicolor LED.
6. Custom color combinations are available.

PACKAGE DIMENSIONS

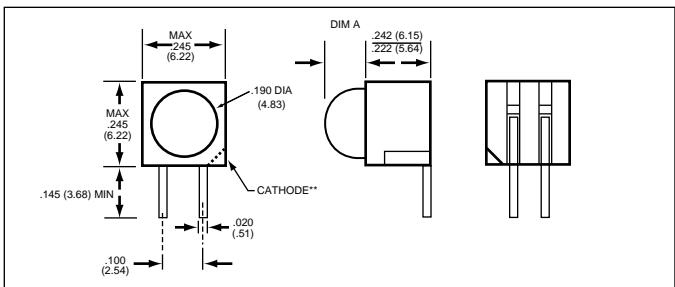


FIG. - 6

T-1 3/4 (5mm)

| PART NUMBER | COLOR | VF | mcd | mA | @ in. (mm) | DIM A | PKG. FIG. |
|-------------------|------------|------|-------|----|-------------|-------|-----------|
| MV60538.MP6 | RED | 1.7 | 2.0 | 20 | .125 (3.18) | .125 | 6 |
| MV63538.MP6 | YLW | 2.1 | 18.0 | 20 | .125 (3.18) | .125 | 6 |
| MV64538.MP6 | GRN | 2.2 | 26.0 | 20 | .125 (3.18) | .125 | 6 |
| MV67538.MP6 | H-E RED | 2.1 | 14.0 | 20 | .125 (3.18) | .125 | 6 |
| MV60539.MP6 | RED | 1.7 | 3.2 | 20 | .180 (4.57) | .180 | 6 |
| MV63539.MP6 | YLW | 2.1 | 20.0 | 20 | .180 (4.57) | .180 | 6 |
| MV64539.MP6 | GRN | 2.2 | 28.0 | 20 | .180 (4.57) | .180 | 6 |
| MV67539.MP6 | H-E RED | 2.1 | 15.0 | 20 | .180 (4.57) | .180 | 6 |
| LOW CURRENT (2mA) | | | | | | | |
| HLMP-47009.MP6 | H-E RED | 1.8 | 2.0 | 2 | .180 (4.57) | .180 | 6 |
| HLMP-47199.MP6 | YLW | 1.9 | 2.0 | 2 | .180 (4.57) | .180 | 6 |
| HLMP-47409.MP6 | GRN | 1.9 | 3.0 | 2 | .180 (4.57) | .180 | 6 |
| AlGaAs RED | | | | | | | |
| HLMP-D1019.MP6 | AlGaAs RED | 1.8 | 70.0 | 20 | .180 (4.57) | .180 | 6 |
| HLMP-D1509.MP6 | AlGaAs RED | 1.6 | 3.0 | 1 | .180 (4.57) | .180 | 6 |
| ULTRA BRIGHT | | | | | | | |
| MV33509.MP6 | YLW* | 2.2 | 150.0 | 20 | .180 (4.57) | .180 | 6 |
| MV34509.MP6 | GRN* | 2.2 | 150.0 | 20 | .180 (4.57) | .180 | 6 |
| MV37509.MP6 | H-E RED* | 2.2 | 150.0 | 20 | .180 (4.57) | .180 | 6 |
| INTEGRAL RESISTOR | | | | | | | |
| MR30509.MP6 | RED | 5.0 | 2.0 | 13 | .180 (4.57) | .180 | 6 |
| MR30519.MP6 | RED | 12.0 | 2.0 | 13 | .180 (4.57) | .180 | 6 |
| MR33509.MP6 | YLW | 5.0 | 4.0 | 10 | .180 (4.57) | .180 | 6 |
| MR33519.MP6 | YLW | 12.0 | 4.0 | 13 | .180 (4.57) | .180 | 6 |
| MR34509.MP6 | GRN | 5.0 | 4.0 | 12 | .180 (4.57) | .180 | 6 |
| MR34519.MP6 | GRN | 12.0 | 4.0 | 13 | .180 (4.57) | .180 | 6 |
| MR37509.MP6 | H-E RED | 5.0 | 4.0 | 10 | .180 (4.57) | .180 | 6 |
| MR37519.MP6 | H-E RED | 12.0 | 4.0 | 13 | .180 (4.57) | .180 | 6 |
| BICOLOR** | | | | | | | |
| MV54919.MP6 | RED/GRN | 2.3 | 6.0 | 20 | .180 (4.57) | .180 | 6 |

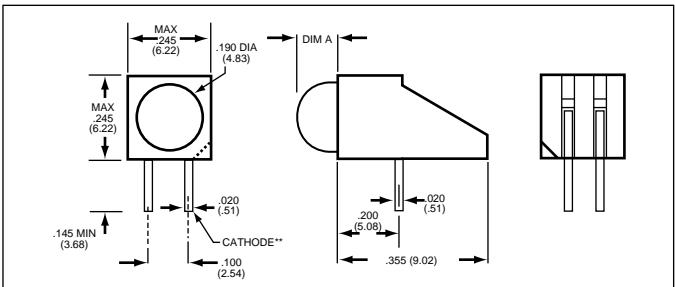


FIG. - 7

T-1 3/4 (5mm)

| PART NUMBER | COLOR | VF | mcd | mA | @ in. (mm) | DIM A | PKG. FIG. |
|-------------------|------------|------|-------|----|-------------|-------|-----------|
| MV60538.MP7 | RED | 1.7 | 2.0 | 20 | .125 (3.18) | .125 | 7 |
| MV63538.MP7 | YLW | 2.1 | 18.0 | 20 | .125 (3.18) | .125 | 7 |
| MV64538.MP7 | GRN | 2.2 | 26.0 | 20 | .125 (3.18) | .125 | 7 |
| MV67538.MP7 | H-E RED | 2.1 | 14.0 | 20 | .125 (3.18) | .125 | 7 |
| MV60539.MP7 | RED | 1.7 | 3.2 | 20 | .183 (4.65) | .183 | 7 |
| MV63539.MP7 | YLW | 2.1 | 20.0 | 20 | .183 (4.65) | .183 | 7 |
| MV64539.MP7 | GRN | 2.2 | 28.0 | 20 | .183 (4.65) | .183 | 7 |
| MV67539.MP7 | H-E RED | 2.1 | 15.0 | 20 | .183 (4.65) | .183 | 7 |
| LOW CURRENT (2mA) | | | | | | | |
| HLMP-47009.MP7 | H-E RED | 1.8 | 2.0 | 2 | .183 (4.65) | .183 | 7 |
| HLMP-47199.MP7 | YLW | 1.9 | 2.0 | 2 | .183 (4.65) | .183 | 7 |
| HLMP-47409.MP7 | GRN | 1.9 | 3.0 | 2 | .183 (4.65) | .183 | 7 |
| AlGaAs RED | | | | | | | |
| HLMP-D1019.MP7 | AlGaAs RED | 1.8 | 70.0 | 20 | .183 (4.65) | .183 | 7 |
| HLMP-D1509.MP7 | AlGaAs RED | 1.6 | 3.0 | 1 | .183 (4.65) | .183 | 7 |
| ULTRA BRIGHT | | | | | | | |
| MV33509.MP7 | YLW* | 2.2 | 150.0 | 20 | .183 (4.65) | .183 | 7 |
| MV34509.MP7 | GRN* | 2.2 | 150.0 | 20 | .183 (4.65) | .183 | 7 |
| MV37509.MP7 | H-E RED* | 2.2 | 150.0 | 20 | .183 (4.65) | .183 | 7 |
| INTEGRAL RESISTOR | | | | | | | |
| MR30509.MP7 | RED | 5.0 | 2.0 | 13 | .183 (4.65) | .183 | 7 |
| MR30519.MP7 | RED | 12.0 | 2.0 | 13 | .183 (4.65) | .183 | 7 |
| MR33509.MP7 | YLW | 5.0 | 4.0 | 10 | .183 (4.65) | .183 | 7 |
| MR33519.MP7 | YLW | 12.0 | 4.0 | 13 | .183 (4.65) | .183 | 7 |
| MR34509.MP7 | GRN | 5.0 | 4.0 | 12 | .183 (4.65) | .183 | 7 |
| MR34519.MP7 | GRN | 12.0 | 4.0 | 13 | .183 (4.65) | .183 | 7 |
| MR37509.MP7 | H-E RED | 5.0 | 4.0 | 10 | .183 (4.65) | .183 | 7 |
| MR37519.MP7 | H-E RED | 12.0 | 4.0 | 13 | .183 (4.65) | .183 | 7 |
| BICOLOR** | | | | | | | |
| MV54919.MP7 | RED/GRN | 2.3 | 6.0 | 20 | .183 (4.65) | .183 | 7 |

GENERAL NOTES:

- All dimensions are in inches (mm).
- Tolerance is $\pm .015$ ($\pm .38$) unless otherwise specified.
- All electrical values are typical.
- All parts have colored *diffused* lens except those with an asterik (*), which denotes colored *clear* lens.
- A double asterik (**) denotes that the cathode, as indicated, is the red cathode for the RED/GRN bicolor LED.
- Custom color combinations are available.

PACKAGE DIMENSIONS

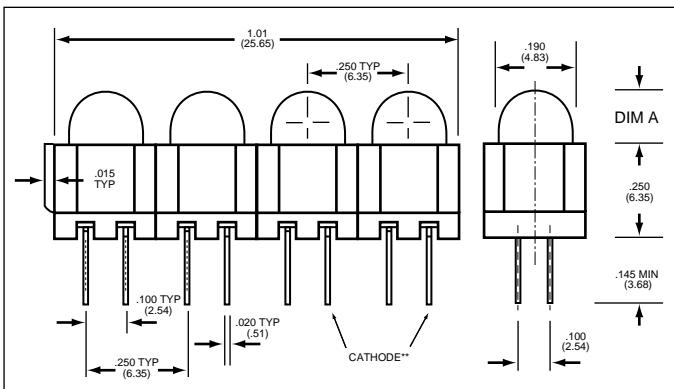


FIG. - 8

SPECIFIC NOTES:

For T-1 3/4 (5mm) multiple, multiples of four is the standard configuration.

Options — To obtain units in multiples of two add a "-2" suffix to the part number (i.e. MV64539.MP8-2). To obtain units in multiples of three add a "-3" suffix.

T-1 3/4 (5mm) multiple

| PART NUMBER | COLOR | VF | mcd | mA | in. | DIM A | PKG. |
|-------------------|----------|------|-------|----|------|--------|------|
| MV60538.MP8 | RED | 1.7 | 2.0 | 20 | .140 | (3.56) | 8 |
| MV63538.MP8 | YLW | 2.1 | 18.0 | 20 | .140 | (3.56) | 8 |
| MV64538.MP8 | GRN | 2.2 | 26.0 | 20 | .140 | (3.56) | 8 |
| MV67538.MP8 | H-E RED | 2.1 | 14.0 | 20 | .140 | (3.56) | 8 |
| MV60539.MP8 | RED | 1.7 | 3.2 | 20 | .195 | (4.95) | 8 |
| MV63539.MP8 | YLW | 2.1 | 20.0 | 20 | .195 | (4.95) | 8 |
| MV64539.MP8 | GRN | 2.2 | 28.0 | 20 | .195 | (4.95) | 8 |
| MV67539.MP8 | H-E RED | 2.1 | 15.0 | 20 | .195 | (4.95) | 8 |
| LOW CURRENT (2mA) | | | | | | | |
| HLMP-47009.MP8 | H-E RED | 1.8 | 2.0 | 2 | .195 | (4.95) | 8 |
| HLMP-47199.MP8 | YLW | 1.9 | 2.0 | 2 | .195 | (4.95) | 8 |
| HLMP-47409.MP8 | GRN | 1.9 | 3.0 | 2 | .195 | (4.95) | 8 |
| ULTRA BRIGHT | | | | | | | |
| MV33509.MP8 | YLW* | 2.2 | 150.0 | 20 | .195 | (4.95) | 8 |
| MV34509.MP8 | GRN* | 2.2 | 150.0 | 20 | .195 | (4.95) | 8 |
| MV37509.MP8 | H-E RED* | 2.2 | 150.0 | 20 | .195 | (4.95) | 8 |
| INTEGRAL RESISTOR | | | | | | | |
| MR30509.MP8 | RED | 5.0 | 2.0 | 13 | .195 | (4.95) | 8 |
| MR30519.MP8 | RED | 12.0 | 2.0 | 13 | .195 | (4.95) | 8 |
| MR33509.MP8 | YLW | 5.0 | 4.0 | 10 | .195 | (4.95) | 8 |
| MR33519.MP8 | YLW | 12.0 | 4.0 | 13 | .195 | (4.95) | 8 |
| MR34509.MP8 | GRN | 5.0 | 4.0 | 12 | .195 | (4.95) | 8 |
| MR34519.MP8 | GRN | 12.0 | 4.0 | 13 | .195 | (4.95) | 8 |
| MR37509.MP8 | H-E RED | 5.0 | 4.0 | 10 | .195 | (4.95) | 8 |
| MR37519.MP8 | H-E RED | 12.0 | 4.0 | 13 | .195 | (4.95) | 8 |
| BICOLOR** | | | | | | | |
| MV54919.MP8 | RED/GRN | 2.3 | 6.0 | 20 | .195 | (4.95) | 8 |

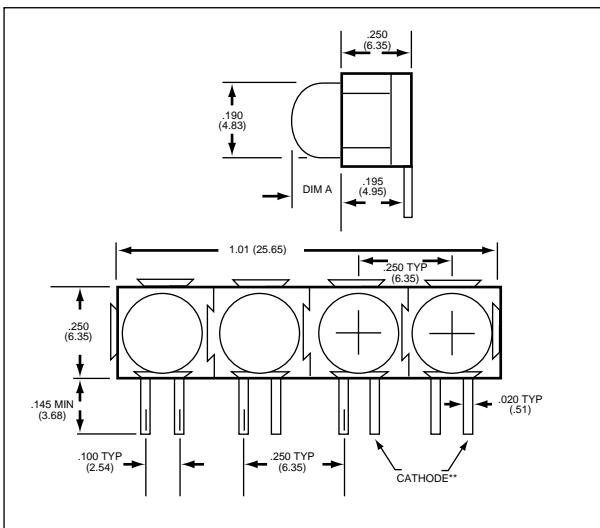


FIG. - 8A

GENERAL NOTES:

1. All dimensions are in inches (mm).
2. Tolerance is $\pm .015$ ($\pm .38$) unless otherwise specified.
3. All electrical values are typical.
4. All parts have colored *diffused* lens except those with an asterik (*), which denotes colored *clear* lens.
5. A double asterik (**) denotes that the cathode, as indicated, is the red cathode for the RED/GRN bicolor LED.
6. Custom color combinations are available.

T-1 3/4 (5mm) multiple

| PART NUMBER | COLOR | VF | mcd | mA | in. | DIM A | PKG. |
|-------------------|----------|------|-------|----|------|--------|------|
| MV60538.MP8A | RED | 1.7 | 2.0 | 20 | .140 | (3.56) | 8A |
| MV63538.MP8A | YLW | 2.1 | 18.0 | 20 | .140 | (3.56) | 8A |
| MV64538.MP8A | GRN | 2.2 | 26.0 | 20 | .140 | (3.56) | 8A |
| MV67538.MP8A | H-E RED | 2.1 | 14.0 | 20 | .140 | (3.56) | 8A |
| MV60539.MP8A | RED | 1.7 | 3.2 | 20 | .195 | (4.95) | 8A |
| MV63539.MP8A | YLW | 2.1 | 20.0 | 20 | .195 | (4.95) | 8A |
| MV64539.MP8A | GRN | 2.2 | 28.0 | 20 | .195 | (4.95) | 8A |
| MV67539.MP8A | H-E RED | 2.1 | 15.0 | 20 | .195 | (4.95) | 8A |
| LOW CURRENT (2mA) | | | | | | | |
| HLMP-47009.MP8A | H-E RED | 1.8 | 2.0 | 2 | .195 | (4.95) | 8A |
| HLMP-47199.MP8A | YLW | 1.9 | 2.0 | 2 | .195 | (4.95) | 8A |
| HLMP-47409.MP8A | GRN | 1.9 | 3.0 | 2 | .195 | (4.95) | 8A |
| ULTRA BRIGHT | | | | | | | |
| MV33509.MP8A | YLW* | 2.2 | 150.0 | 20 | .195 | (4.95) | 8A |
| MV34509.MP8A | GRN* | 2.2 | 150.0 | 20 | .195 | (4.95) | 8A |
| MV37509.MP8A | H-E RED* | 2.2 | 150.0 | 20 | .195 | (4.95) | 8A |
| INTEGRAL RESISTOR | | | | | | | |
| MR30509.MP8A | RED | 5.0 | 2.0 | 13 | .195 | (4.95) | 8A |
| MR30519.MP8A | RED | 12.0 | 2.0 | 13 | .195 | (4.95) | 8A |
| MR33509.MP8A | YLW | 5.0 | 4.0 | 10 | .195 | (4.95) | 8A |
| MR33519.MP8A | YLW | 12.0 | 4.0 | 13 | .195 | (4.95) | 8A |
| MR34509.MP8A | GRN | 5.0 | 4.0 | 12 | .195 | (4.95) | 8A |
| MR34519.MP8A | GRN | 12.0 | 4.0 | 13 | .195 | (4.95) | 8A |
| MR37509.MP8A | H-E RED | 5.0 | 4.0 | 10 | .195 | (4.95) | 8A |
| MR37519.MP8A | H-E RED | 12.0 | 4.0 | 13 | .195 | (4.95) | 8A |
| BICOLOR** | | | | | | | |
| MV54919.MP8A | RED/GRN | 2.3 | 6.0 | 20 | .195 | (4.95) | 8A |

PACKAGE DIMENSIONS

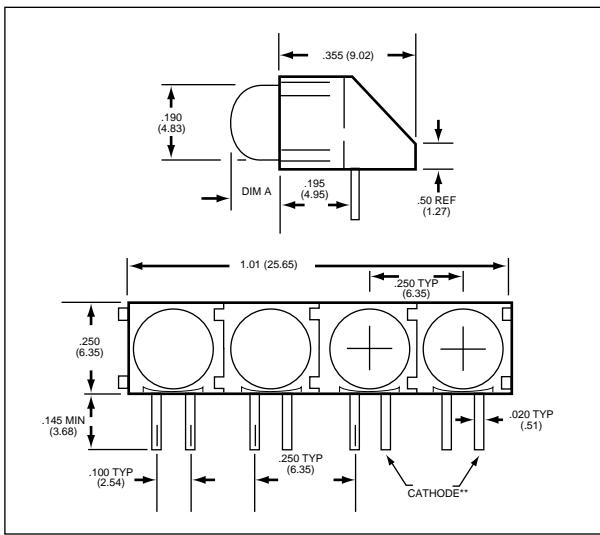


FIG. - 8B

SPECIFIC NOTES:

For T-1 3/4 (5mm) multiple, multiples of four is the standard configuration.

Options — To obtain units in multiples of two add a "-2" suffix to the part number (i.e. MV64539.MP8-2). To obtain units in multiples of three add a "-3" suffix.

T-1 3/4 (5mm) multiple

| PART NUMBER | COLOR | VF | mcd | mA | DIM A in. (mm) | PKG. FIG. |
|-------------------|-----------|------|-------|----|-------------------|--------------|
| MV60538.MP8B | RED | 1.7 | 2.0 | 20 | .140 (3.56) | 8B |
| MV63538.MP8B | YLW | 2.1 | 18.0 | 20 | .140 (3.56) | 8B |
| MV64538.MP8B | GRN | 2.2 | 26.0 | 20 | .140 (3.56) | 8B |
| MV67538.MP8B | H-E RED | 2.1 | 14.0 | 20 | .140 (3.56) | 8B |
| MV60539.MP8B | RED | 1.7 | 3.2 | 20 | .195 (4.95) | 8B |
| MV63539.MP8B | YLW | 2.1 | 20.0 | 20 | .195 (4.95) | 8B |
| MV64539.MP8B | GRN | 2.2 | 28.0 | 20 | .195 (4.95) | 8B |
| MV67539.MP8B | H-E RED | 2.1 | 15.0 | 20 | .195 (4.95) | 8B |
| LOW CURRENT (2mA) | | | | | | |
| HLMP-47009.MP8B | H-E RED | 1.8 | 2.0 | 2 | .195 (4.95) | 8B |
| HLMP-47199.MP8B | YLW | 1.9 | 2.0 | 2 | .195 (4.95) | 8B |
| HLMP-47409.MP8B | GRN | 1.9 | 3.0 | 2 | .195 (4.95) | 8B |
| ULTRA BRIGHT | | | | | | |
| MV33509.MP8B | YLW* | 2.2 | 150.0 | 20 | .195 (4.95) | 8B |
| MV34509.MP8B | GRN* | 2.2 | 150.0 | 20 | .195 (4.95) | 8B |
| MV37509.MP8B | H-E. RED* | 2.2 | 150.0 | 20 | .195 (4.95) | 8B |
| INTEGRAL RESISTOR | | | | | | |
| MR30509.MP8B | RED | 5.0 | 2.0 | 13 | .195 (4.95) | 8B |
| MR30519.MP8B | RED | 12.0 | 2.0 | 13 | .195 (4.95) | 8B |
| MR33509.MP8B | YLW | 5.0 | 4.0 | 10 | .195 (4.95) | 8B |
| MR33519.MP8B | YLW | 12.0 | 4.0 | 13 | .195 (4.95) | 8B |
| MR34509.MP8B | GRN | 5.0 | 4.0 | 12 | .195 (4.95) | 8B |
| MR34519.MP8B | GRN | 12.0 | 4.0 | 13 | .195 (4.95) | 8B |
| MR37509.MP8B | H-E RED | 5.0 | 4.0 | 10 | .195 (4.95) | 8B |
| MR37519.MP8B | H-E RED | 12.0 | 4.0 | 13 | .195 (4.95) | 8B |
| BICOLOR** | | | | | | |
| MV54919.MP8B | RED/GRN | 2.3 | 6.0 | 20 | .195 (4.95) | 8B |

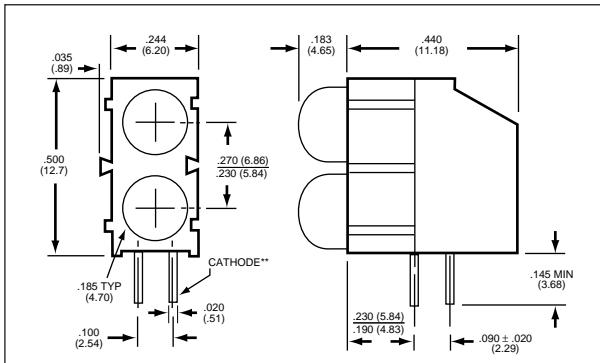


FIG. - 9
Parts are stackable

GENERAL NOTES:

1. All dimensions are in inches (mm).
2. Tolerance is $\pm .015$ ($\pm .38$) unless otherwise specified.
3. All electrical values are typical.
4. All parts have colored *diffused* lens except those with an asterik (*), which denotes colored *clear* lens.
5. A double asterik (**) denotes that the cathode, as indicated, is the red cathode for the RED/GRN bicolor LED.
6. Custom color combinations are available.

T-1 3/4 (5 mm) bilevel

| PART NUMBER | COLOR | VF | mcd | mA | DIM A in. (mm) | PKG. FIG. |
|-------------------|------------------|-----|-------|----|-------------------|--------------|
| MV60539.MP90 | RED/RED | 1.7 | 3.2 | 20 | .195 (4.95) | 9 |
| MV63539.MP93 | YLW/YLW | 2.1 | 20.0 | 20 | .195 (4.95) | 9 |
| MV64539.MP94 | GRN/GRN | 2.2 | 28.0 | 20 | .195 (4.95) | 9 |
| MV67539.MP97 | H-E RED/H-E RED | 2.1 | 15.0 | 20 | .195 (4.95) | 9 |
| LOW CURRENT (2mA) | | | | | | |
| HLMP-47009.MP97 | H-E RED/H-E RED | 1.8 | 2.0 | 2 | .195 (4.95) | 9 |
| HLMP-47199.MP93 | YLW/YLW | 1.9 | 2.0 | 2 | .195 (4.95) | 9 |
| HLMP-47409.MP94 | GRN/GRN | 1.9 | 3.0 | 2 | .195 (4.95) | 9 |
| ULTRA BRIGHT | | | | | | |
| MV33509.MP93 | YLW/YLW* | 2.2 | 150.0 | 20 | .195 (4.95) | 9 |
| MV34509.MP94 | GRN/GRN* | 2.2 | 150.0 | 20 | .195 (4.95) | 9 |
| MV37509.MP97 | H-E RED/H-E RED* | 2.2 | 150.0 | 20 | .195 (4.95) | 9 |
| INTEGRAL RESISTOR | | | | | | |
| MR30509.MP90 | RED/RED | 5.0 | 2.0 | 13 | .195 (4.95) | 9 |
| MR33509.MP93 | YLW/YLW | 5.0 | 4.0 | 10 | .195 (4.95) | 9 |
| MR34509.MP94 | GRN/GRN | 5.0 | 4.0 | 12 | .195 (4.95) | 9 |
| MR37509.MP97 | H-E RED/H-E RED | 5.0 | 4.0 | 10 | .195 (4.95) | 9 |
| BICOLOR** | | | | | | |
| MV54919.MP91 | R/G/R/G | 2.3 | 6.0 | 20 | .195 (4.95) | 9 |

Call QT Optoelectronics for more information or the phone number of your nearest distributor.

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